

**Apparatus for and Method of Pattern  
Recognition and Image Analysis**

**Abstract**

A method of comparing an input pattern with a memory pattern includes the steps of loading a representation of said input pattern into cells in an input layer; loading a representation of said memory pattern into cells in a memory layer; loading an initial value into cells in intermediate layers between said input layer and said memory layer; comparing values of cells in said intermediate layers with values stored in cells of adjacent layers; updating values stored in cells in said intermediate layers based on said step of comparing; and mapping cells in said memory layer to cells in said input layer.